

demonstrating immunity. As regards the channel of infection the author states that in contact cases of tuberculosis in guinea-pigs three hypotheses, namely, that infection occurs (1) through the mouth, (2) through the nose, or (3) through both. He believes that the channel of infection in guinea-pigs is through the nose, as his experiments show that very small doses given through the nose almost certainly produce pulmonary tuberculosis, whereas observation of habits of the guinea-pig show that infection through the mouth probably does not occur.

## PATHOLOGY AND BACTERIOLOGY

UNDER THE CHARGE OF

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**The Cytology of the Exudate in the Early Stages of Experimental Pneumonia.**—EVANS (*Jour. Infect. Dis.*, 1916, xix, 440) publishes a brief report of an experimental study of the early cellular exudate in acute pneumonic infections. In classifying the cells, which is done according to their origin rather than by morphology, the writer makes use of the indophenol blue reaction, employed to demonstrate the presence of an oxydase ferment in the cell body. Rabbits were used in the experimental work. Pneumonia was induced by intratracheal injections of broth cultures of pneumococci of Groups I and IV and two types of streptococci. The pneumococcus infection gave the gross appearance of lobar pneumonia better than did the streptococci. The lesions were examined after intervals of from eight to thirty-six hours following injection. Tissue from three autopsies on human cases of pneumococcal pneumonia, in which death had occurred at the third, fourth and fifth days respectively, was also available. The fact that the cytology of the exudate in the human cases was quite like that of the experimentally induced exudates is notable and indicates with what success such experimental work may be carried on. The cytology was also practically the same in all the experimental preparations. The cellular elements of the exudate were largely mononuclear although alveoli in which polymorphonuclear cells largely predominated were sometimes found. A few small lymphocytes were always present. A few very large mononuclear cells which were readily classified as epithelial cells also appeared frequently. In addition to these, two other types of large mononuclear cells were present in about equal

numbers. These two types were best differentiated by the indophenol blue reaction for the presence of oxydase ferment. The type showing the presence of the ferment strongly suggested the transitional mononuclear leukocyte (Naegeli), although some resembled myelocytes. The other cells, without oxydase ferment, were considered lymphoid in origin. Their resemblance to the so-called polyblasts (Maximow) is noted. The plates accompanying the article illustrate clearly that differentiation between the large mononuclear types without the use of the oxydase reaction would be quite impossible. Careful examination of a given field, before and after the oxydase reaction should make the distinction a fairly simple matter.

**Spontaneous Amebic Dysentery in Monkeys.**—EICHHORN and GALLAGHER (*Jour. Infect. Dis.*, xix, 395) report an epidemic of amebic dysentery in monkeys. The lesions found resembled in many respects those of human tropical dysentery. The animals were spider monkeys (*atelles ater*) from Central America. One animal when received from Columbia was ill with symptoms similar to those later manifested by the others. It was assumed that this animal carried the infection. Though the food and care which the animals received were of the best, their close association in the same cage and in addition a perverted appetite for their own excrement accounted for the transmission of the infection. The particular species of ameba dealt with was not determined. The organisms were seen both in the vegetative or amoeboid forms, and in encysted forms. The former were most numerous in liver abscesses, though also seen in the intestinal contents where the encysted forms were in greatest numbers. It is pointed out that the encysted stage is usually obtained in the intestinal tract, and is a later stage of the life cycle of the organism. The liver abscesses showing the vegetative form were considered as more recent lesions. Transmission experiments were undertaken with cats, which have been successfully inoculated with the ameba histolytica, the cause of tropical dysentery in the human. These inoculations were, however, without result, although feces containing many encysted ameba were given in quantities that should have assured success. There is, however, good evidence that the ameba, since it was isolated from the intestinal canal in every case and from the liver abscesses, is an important etiological factor if not the only one in the cause of the disease. The early symptoms were lassitude, weakness, indifference and some loss of appetite. Emaciation was not marked. A severe diarrhea was the principal manifestation. The feces were fluid, yellowish gray and very offensive. They were blood stained in the more acute cases. The severe cases lasted only two or three days, while others lived for as many weeks after the onset of symptoms. Fifteen monkeys were exposed. Eight out of the fifteen died, and one of nine showing symptoms recovered. The protocols of the eight deaths are given individually. In all, the cecum and colon were the seat of the most marked lesions. The rectum was involved to a variable extent. The lesions never passed the ileocecal valve. The mesenteric lymph nodes were sometimes enlarged and edematous. In two cases, liver abscesses were present. The mucosa of the large bowel was covered by a dense corrugated mass of grayish granular necrotic material. When less severe, there were isolated ulcers with raised, irregular congested